About this data: Mobile coverage, local and unitary authority area

To create our Connected Nations Spring 2023 update, Ofcom collected and analysed data from the four mobile network operators. This file contains mobile coverage information at local and unitary authority level.

The data was collected as a snapshot in January 2023. Our methodology provides details of our approach to collecting and analysing mobile coverage data.

Due to variations in mobile performance over time, the file should not be regarded as a definitive and fixed view of the UK's mobile infrastructure. However, the information provided in this file may be useful in identifying variations in mobile performance by geography.

If you have any questions or feedback on the data, please contact us at open.data@ofcom.org.uk.

We are providing this data on an open basis via the Open Government Licence, which gives users various freedoms about how they choose to use the data, subject to conditions.

The files are provided as a Comma Separated Values file, with double quote (") text delimiters where applicable.

V2 (15/08/23): Corrected labels for 5G services

Coverage availability

File name: 202301_mobile_laua_with_5g_r01.csv

Total records in file: 1 header row, 374 data rows

File size: 176 KB

Column headers and what they represent:

Field	Label	Note
laua	Lower tier authority	Local and Unitary Authority Code, such as E07000114
laua_name	Lower tier authority name	Local and Unitary Authority Name
prem_count	Number of premises in location	Based on the Connected Nations all premise base definition (Epoch 98)
pixel_count	Number of 100m x 100m pixels in location	
ab_rd_count	Number of 100m x 100m pixels in location containing A or B road features	
mway_count	Number of 100m x 100m pixels in location containing motorway features	
mway_ard_count	Number of 100m x 100m pixels in location containing motorway or A road features	
2G_prem_out_None	2G services, premises (outdoor): no reliable signal (%)	Threshold: -81dBm
2G_prem_out_At_least_one	2G services, premises (outdoor): signal from at least one operator (1, 2 or 3 operators) (%)	Threshold: -81dBm

2G_prem_out_All	2G services, premises (outdoor): signal from all operators (%)	Threshold: -81dBm
2G_prem_in_None	2G services, premises (indoor): no reliable signal (%)	Threshold: -71dBm
2G_prem_in_At_least_one	2G services, premises (indoor): signal from at least one operator (1, 2 or 3 operators) (%)	Threshold: -71dBm
2G_prem_in_All	2G services, premises (indoor): signal from all operators (%)	Threshold: -71dBm
2G_geo_out_None	2G services, geographic (outdoor): no reliable signal (%)	Threshold: -81dBm
2G_geo_out_At_least_one	2G services, geographic (outdoor): signal from at least one operator (1,2 or 3 operators) (%)	Threshold: -81dBm
2G_geo_out_All	2G services, geographic (outdoor): signal from all operators (%)	Threshold: -81dBm
2G_abrd_in_None	2G services, A and B roads: no reliable signal (%)	Threshold: -81dBm
2G_abrd_in_At_least_one	2G services, A and B roads: signal from at least one operator (1,2 or 3 operators) (%)	Threshold: -71dBm
2G_abrd_in_All	2G services, A and B roads: signal from all operators (%)	Threshold: -71dBm
2G_mway_in_None	2G services, motorways: no reliable signal (%)	Threshold: -71dBm
2G_mway_in_At_least_one	2G services, motorways: signal from at least one	Threshold: -71dBm

	operator (1,2 or 3 operators) (%)	
2G_mway_in_All	2G services, motorways: signal from all operators (%)	Threshold: -71dBm
2G_mway_ard_in_None	2G services, motorways and A-roads: no reliable signal (%)	Threshold: -71dBm
2G_mway_ard_in_At_least_one	2G services, motorways and A-roads: signal from at least one operator (1, 2 or 3 operators) (%)	Threshold: -71dBm
2G_mway_ard_in_All	2G services, motorways and A-roads: signal from all operators (%)	Threshold: -71dBm
3G_prem_out_None	3G services, premises (outdoor): no reliable signal (%)	Threshold: -71dBm
3G_prem_out_At_least_one	3G services, premises (outdoor): signal from at least one operator (1, 2, 3 or 4 operators) (%)	Threshold: -100dBm
3G_prem_out_All	3G services, premises (outdoor): signal from all operators (%)	Threshold: -100dBm
3G_prem_in_None	3G services, premises (indoor): no reliable signal (%)	Threshold: -100dBm
3G_prem_in_At_least_one	3G services, premises (indoor): signal from at least one operator (1, 2, 3 or 4 operators) (%)	Threshold: -90dBm
3G_prem_in_All	3G services, premises (indoor): signal from all operators (%)	Threshold: -90dBm

3G_geo_out_None	3G services, geographic (outdoor): no reliable signal (%)	Threshold: -90dBm
3G_geo_out_At_least_one	3G services, geographic (outdoor): signal from at least one operator (1, 2, 3 or 4 operators) (%)	Threshold: -100dBm
3G_geo_out_All	3G services, geographic (outdoor): signal from all operators (%)	Threshold: -100dBm
3G_abrd_in_None	3G services, A and B roads: no reliable signal (%)	Threshold: -100dBm
3G_abrd_in_At_least_one	3G services, A and B roads: signal from at least one operator (1, 2, 3 or 4 operators) (%)	Threshold: -90dBm
3G_abrd_in_All	3G services, A and B roads: signal from all operators (%)	Threshold: -90dBm
3G_mway_in_None	3G services, motorways: no reliable signal (%)	Threshold: -90dBm
3G_mway_in_At_least_one	3G services, motorways: signal from at least one operator (1, 2, 3 or 4 operators) (%)	Threshold: -90dBm
3G_mway_in_All	3G services, motorways: signal from all operators (%)	Threshold: -90dBm
3G_mway_ard_in_None	3G services, motorways and A-roads: no reliable signal (%)	Threshold: -90dBm
3G_mway_ard_in_At_least_one	3G services, motorways and A-roads: signal from at least one operator (1, 2, 3 or 4 operators) (%)	Threshold: -90dBm

3G_mway_ard_in_All	3G services, motorways and A-roads: signal from all operators (%)	Threshold: -90dBm
4G_prem_out_None	4G services, premises (outdoor): no reliable signal (%)	Threshold: -90dBm
4G_prem_out_At_least_one	4G services, premises (outdoor): signal from at least one operator (1, 2, 3 or 4 operators) (%)	Threshold: -105dBm
4G_prem_out_All	4G services, premises (outdoor): signal from all operators (%)	Threshold: -105dBm
4G_prem_in_None	4G services, premises (indoor): no reliable signal (%)	Threshold: -105dBm
4G_prem_in_At_least_one	4G services, premises (indoor): signal from at least one operator (1, 2, 3 or 4 operators) (%)	Threshold: -95dBm
4G_prem_in_All	4G services, premises (indoor): signal from all operators (%)	Threshold: -95dBm
4G_geo_out_None	4G services, geographic (outdoor): no reliable signal (%)	Threshold: -95dBm
4G_geo_out_At_least_one	4G services, geographic (outdoor): signal from at least one operator (1, 2, 3 or 4 operators) (%)	Threshold: -105dBm
4G_geo_out_All	4G services, geographic (outdoor): signal from all operators (%)	Threshold: -105dBm
4G_abrd_in_None	4G services, A and B roads: no reliable signal (%)	Threshold: -105dBm

4G_abrd_in_At_least_one	4G services, A and B roads: signal from at least one operator (1, 2, 3 or 4 operators) (%)	Threshold: -95dBm
4G_abrd_in_All	4G services, A and B roads: signal from all operators (%)	Threshold: -95dBm
4G_mway_in_None	4G services, motorways: no reliable signal (%)	Threshold: -95dBm
4G_mway_in_At_least_one	4G services, motorways: signal from at least one operator (1, 2, 3 or 4 operators) (%)	Threshold: -95dBm
4G_mway_in_All	4G services, motorways: signal from all operators (%)	Threshold: -95dBm
4G_mway_ard_in_None	4G services, motorways and A-roads: no reliable signal (%)	Threshold: -95dBm
4G_mway_ard_in_At_least_one	4G services, motorways and A-roads: signal from at least one operator (1, 2, 3 or 4 operators) (%)	Threshold: -95dBm
4G_mway_ard_in_All	4G services, motorways and A-roads: signal from all operators (%)	Threshold: -95dBm
Voice_prem_out_None	Voice services, premises (outdoor): no reliable signal (%)	Threshold: -95dBm
Voice_prem_out_At_least_one	Voice services, premises (outdoor): signal from at least one operator (1, 2, 3 or 4 operators) (%)	See below for 2G, 3G, 4G threshold levels
Voice_prem_out_All	Voice services, premises (outdoor): signal from all operators (%)	See below for 2G, 3G, 4G threshold levels

Voice_prem_in_None	Voice services, premises (indoor): no reliable signal (%)	See below for 2G, 3G, 4G threshold levels
Voice_prem_in_At_least_one	Voice services, premises (indoor): signal from at least one operator (1, 2, 3 or 4 operators) (%)	See below for 2G, 3G, 4G threshold levels
Voice_prem_in_All	Voice services, premises (indoor): signal from all operators (%)	See below for 2G, 3G, 4G threshold levels
Voice_geo_out_None	Voice services, geographic (outdoor): no reliable signal (%)	See below for 2G, 3G, 4G threshold levels
Voice_geo_out_At_least_one	Voice services, geographic (outdoor): signal from at least one operator (1, 2, 3 or 4 operators) (%)	See below for 2G, 3G, 4G threshold levels
Voice_geo_out_All	Voice services, geographic (outdoor): signal from all operators (%)	See below for 2G, 3G, 4G threshold levels
Voice_abrd_in_None	Voice services, A and B roads: no reliable signal (%)	See below for 2G, 3G, 4G threshold levels
Voice_abrd_in_At_least_one	Voice services, A and B roads: signal from at least one operator (1, 2, 3 or 4 operators) (%)	See below for 2G, 3G, 4G threshold levels
Voice_abrd_in_All	Voice services, A and B roads: signal from all operators (%)	See below for 2G, 3G, 4G threshold levels
Voice_mway_in_None	Voice services, motorways: no reliable signal (%)	See below for 2G, 3G, 4G threshold levels
Voice_mway_in_At_least_one	Voice services, motorways: signal from	See below for 2G, 3G, 4G threshold levels

	at least one operator (1, 2, 3 or 4 operators) (%)	
Voice_mway_in_All	Voice services, motorways: signal from all operators (%)	See below for 2G, 3G, 4G threshold levels
Voice_mway_ard_in_None	Voice services, motorways and A-roads: no reliable signal (%)	See below for 2G, 3G, 4G threshold levels
Voice_mway_ard_in_At_least_one	Voice services, motorways and A-roads: signal from at least one operator (1, 2, 3 or 4 operators) (%)	See below for 2G, 3G, 4G threshold levels
Voice_mway_ard_in_All	Voice services, motorways and A-roads: signal from all operators (%)	See below for 2G, 3G, 4G threshold levels
Data_prem_out_None	Data services, premises (outdoor): no reliable signal (%)	See below for 2G, 3G, 4G threshold levels
Data_prem_out_At_least_one	Data services, premises (outdoor): signal from at least one operator (1, 2, 3 or 4 operators) (%)	See below for 3G, 4G threshold levels
Data_prem_out_All	Data services, premises (outdoor): signal from all operators (%)	See below for 3G, 4G threshold levels
Data_prem_in_None	Data services, premises (indoor): no reliable signal (%)	See below for 3G, 4G threshold levels
Data_prem_in_At_least_one	Data services, premises (indoor): signal from at least one operator (1, 2, 3 or 4 operators) (%)	See below for 3G, 4G threshold levels
Data_prem_in_All	Data services, premises (indoor): signal from all operators (%)	See below for 3G, 4G threshold levels

Data_geo_out_None	Data services, geographic (outdoor): no reliable signal (%)	See below for 3G, 4G threshold levels
Data_geo_out_At_least_one	Data services, geographic (outdoor): signal from at least one operator (1, 2, 3 or 4 operators) (%)	See below for 3G, 4G threshold levels
Data_geo_out_All	Data services, geographic (outdoor): signal from all operators (%)	See below for 3G, 4G threshold levels
Data_abrd_in_None	Data services, A and B roads: no reliable signal (%)	See below for 3G, 4G threshold levels
Data_abrd_in_At_least_one	Data services, A and B roads: signal from at least one operator (1, 2, 3 or 4 operators) (%)	See below for 3G, 4G threshold levels
Data_abrd_in_All	Data services, A and B roads: signal from all operators (%)	See below for 3G, 4G threshold levels
Data_mway_in_None	Data services, motorways: no reliable signal (%)	See below for 3G, 4G threshold levels
Data_mway_in_At_least_one	Data services, motorways: signal from at least one operator (1, 2, 3 or 4 operators) (%)	See below for 3G, 4G threshold levels
Data_mway_in_All	Data services, motorways: signal from all operators (%)	See below for 3G, 4G threshold levels
Data_mway_ard_in_None	Data services, motorways and A-roads: no reliable signal (%)	See below for 3G, 4G threshold levels
Data_mway_ard_in_At_least_one	Data services, motorways and A-roads: signal from at least one operator (1, 2, 3 or 4 operators) (%)	See below for 3G, 4G threshold levels

Data_mway_ard_in_All	Data services, motorways and A-roads: signal from all operators (%)	See below for 3G, 4G threshold levels
5G_high_confidence_prem_out_None	5G services, premises (outdoor): no reliable signal (%)	Threshold: -110dBm
5G_high_confidence_prem_out_At_least_ one	5G services, premises (outdoor): signal from at least one operator (1, 2, 3 or 4 operators) (%)	Threshold: -110dBm
5G_high_confidence_prem_out_All	5G services, premises (outdoor): signal from all operators (%)	Threshold: -110dBm
5G_high_confidence_geo_out_None	5G services, geographic (outdoor): no reliable signal (%)	Threshold: -110dBm
5G_high_confidence_geo_out_At_least_ one	5G services, geographic (outdoor): signal from at least one operator (1, 2, 3 or 4 operators) (%)	Threshold: -110dBm
5G_high_confidence_geo_out_All	5G services, geographic (outdoor): signal from all operators (%)	Threshold: -110dBm
5G_very_high_confidence_prem_out_None	5G services, premises (outdoor): no reliable signal (%)	Threshold: -100dBm
5G_very_high_confidence_prem_out_ At_least_one	5G services, premises (outdoor): signal from at least one operator (1, 2, 3 or 4 operators) (%)	Threshold: -100dBm
5G_very_high_confidence_prem_out_All	5G services, premises (outdoor): signal from all operators (%)	Threshold: -100dBm
5G_very_high_confidence_geo_out_None	5G services, geographic (outdoor): no reliable signal (%)	Threshold: -100dBm

5G_very_high_confidence_geo_out_ At_least_one	5G services, geographic (outdoor): signal from at least one operator (1, 2, 3 or 4 operators) (%)	Threshold: -100dBm
5G_very_high_confidence_prem_out_All	5G services, geographic (outdoor): signal from all operators (%)	Threshold: -100dBm

Signal thresholds

We use the following signal strength thresholds when estimating coverage:

Service		Metric	Outdoor	Indoor and in-car
2G		RxLev	-81dBm	-71dBm
3G		RSCP CPiCH	-100dBm	-90dBm
4G (voice and enhanced data)		RSRP	-105dBm	-95dBm
Voice	2G	RxLev	-81dBm	-71dBm
	3G	RSCP CPiCH	-100dBm	-90dBm
	4G	RSRP	-105dBm	-95dBm
Data (basic)	3G	RSCP CPiCH	-100dBm	-90dBm
	4G	RSRP	-115dBm	-105dBm
5G high confidence		SS-RSRP	-110dBm	N/A
5G very high confidence		SS-RSRP	-100dbm	N/A